

# New England Coalition

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on *Nuclear Pollution*

September 10, 2004

Alan B. Wang, Project Manager, Section 2  
Project Directorate IV  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation  
US Nuclear Regulatory Commission  
Washington, D.C. 20555-0001

## **SUPPLEMENT TO NEW ENGLAND COALITION'S PETITION UNDER PROVISIONS OF 10 CFR 2.206 FOR VERMONT YANKEE (TAC NO. MC2745)**

Dear Mr. Wang,

In accord with provisions of 10 CFR 2.206 and NRC Management Directive 8.11(Part III (i), New England Coalition respectfully submits this **Supplement** to our petition and request for enforcement action previously filed On April 23, 2004.

New England Coalition's 2.206 Petition requested (upon clarification with a Petition Review Board meeting) that Entergy Nuclear Vermont Yankee, in consideration of the licensee's loss of control of spent fuel inventory and a history of damaged fuel, be required to produce an accurate account of the location, disposition, and condition all special nuclear materials (SNM).

New England Coalition further asserted that, based upon information and belief, it would be "impossible to tell with certainty, if what is found (in a search of the spent fuel pool) is what is missing from the canister<sup>1</sup> or if it is from any number of failed or broken pins. Finally, New England Coalition requested the NRC "verify" the licensee's complete inventory of all SNM.

Recently accessed information requires that New England Coalition now supplement and amend its petition in two respects:

### **(1) Reliance of the Representations of the Licensee**

It is now evident that on March 26, 2004, the licensee made a material misrepresentation to NRC regarding confirmation that the fuel segments (pieces) in question were in the original designated storage location (modified bucket).

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<sup>1</sup> A stainless steel milk pail with two pieces of vertical pipe welded to the inside of the pail base or floor.

Following searches of the spent fuel pool, the licensee also claimed (in press releases provided to NRC) that all containers in the spent fuel pool had been examined; later claiming that a closed stainless steel cylinder (3 feet in length by 3 inches in diameter) that was found to contain fuel was mistaken for a rack component.

New England Coalition contends that the licensee's willingness to mislead and mischaracterize the fuel search effort justifies, as stated in New England Coalition's original petition, an independent NRC verification of the licensee's complete inventory of all SNM.

New England Coalition is aware that NRC inspection staff performed a verification of the licensee's identification and inventory of spent fuel assemblies by examining a sample number of fuel assemblies reported and as-found locations.

However, what is at issue is not the question of missing or misplaced fuel assemblies. It was not the case at Millstone or at Humbolt Bay and it is not the case at Vermont Yankee. In each case the licensee lost control of spent fuel pins or pin segments. Neither ENVY nor NRC pulled fuel assemblies from their rack locations to determine if fuel pins or portions of fuel pins were missing.

A simple head count of fuel assemblies does not verify that the licensee has not lost or misplaced additional fuel pins or fuel segments.

New England Coalition realizes that pointing to the licensee's material misrepresentation (above) may be treated as an allegation apart from the 10 CFR 2.206 process, however New England Coalition contends that the document which carries the misrepresentation, an E-mail from David Mannai of ENVY to Residents NRC Inspectors David Pelton and Beth Sienel (Attached) should also be considered in weighing the depth and detail of verification required.

## **(2) Verification that the fuel that has been found is the fuel that was missing.**

Positive identification of the missing fuel requires more than one matching or near matching characteristic. To date, New England Coalition is aware that the licensee has reported only that a special container was ordered from General Electric in the proximate timeframe of recording that fuel fragments were placed in the open pail; that ENVY personnel found fuel pieces in a container (presumed to be the one ordered from General Electric) of the approximate length<sup>2</sup> of that assumed for the missing fuel.

However, verification of any additional identifying characteristics, if it has been done, has not been made public. This is problematic because: (a) the initial report on NRC's Headquarters Report stated that pins (plural) were broken into "several pieces," but only two pieces have been named missing and proclaimed to be found, (2) there is a confusion about the outside diameter (O.D.) of the missing pieces. So far the licensee and the NRC have reported that the missing pin sections were the thickness of a "pencil" or about 5/16

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<sup>2</sup> The length of the two pieces was first reported as seventeen and seven inches; then as 17.5 inches and 9 inches.

of an inch in diameter and then that the pieces were 0.49 inches or about ½ an inch in diameter. Vermont Yankee's FSAR states that the fuel pins at start-up were 0.56 (or around 9/16 ) inches in diameter. This diameter is typical of a 7X7 fuel array. A search of NRC documents in the 1979 time frame reveals that Vermont Yankee had begun, as early as 1974 or 1975, to move to an 8X8 array. In this case a smaller diameter pin would be expected. What is unclear is what fuel load and from which array did the missing fuel originate.

In this same timeframe, New England Coalition found, not only indications of significant fuel damage, but two documents, Accession # 7903150191 – 19790212 Requests Registration As A User Of Model GE-1600.Utility Intends To Ship Fuel Pins From Selected Irradiated Fuel Assemblies As Part Of A Fuel Examination Program and Accession # 7903150334 – 19790233 Responds to 790209 Proposal to Use Shipping Cask & Lifting Device To Remove Fuel From Several Failed Fuel Bundles For Shipment To Vallecitos Nuclear Center. Use of Cask Is Acceptable, memorialize the practice of sending fuel and fuels segments under warranty to General Electric at Vallecitos, California for testing. It is uncertain if Vallecitos then return those fuel pins and segments to the licensees, but it should be noted that the factor of such shipments to GE was also raised in the instance of missing fuel at Millstone and at Humbolt Bay.

In the case of Humbolt Bay, it is reported that four 18-inch segments of 0.464 inches O.D. are missing. If GE/Vallecitos indeed return irradiated fuel to the licensees, then the possibility that the fuel found in the GE container at Vermont Yankee came from Vallecitos and further, may not even have originated at Vermont Yankee should be considered.

In any case, the diameter, activity, cladding characteristics, and apparent age of the fuel pieces must be examined and compared to the larger sections from which it is assumed they came and which are now stored in the fuel racks. In as much as it has been reported that the pieces were "broken" from the fuel pin, it should also be possible and required to match the break lines for definitive verification.

**Summary** – The licensee did lose control of SNM inventory and documentation. The licensee did make material false statements with respect to the missing fuel. Whole reliance cannot be placed upon the representations of the licensee with any degree of confidence.

Statements of both NRC and the licensee are loaded with apparent contradictions regarding the occurrence or occurrences in which the fuel pieces were generated and regarding number and the physical characteristics of the missing fuel pieces.

New England Coalition reasserts the need for a detailed and comprehensive inventory that is verified by NRC. New England Coalition again respectfully requests that:

- NRC require the license to do a detailed and verifiable inventory of all SNM generated at Vermont Yankee,
- NRC verify the inventory (in detail),

and now adds,

- NRC require Vermont Yankee to restore its documentation of the location and condition of all SNM generated at Vermont Yankee,
  - NRC verify the accuracy and completeness of the documentation,
- and
- NRC prohibit the licensee from moving additional irradiated fuel to the spent fuel pool until the above required activities and verifications are completed.

I am available for any questions that NRC may have, or to provide any clarifications that the Petition Review Board may require. We would appreciate the opportunity to provide the PRB with additional documentation as it becomes available.

Mr. Wang, please distribute this Petition Supplement to the appropriate addressees at NRC. I will provide a copy to the licensee.

Thank you for your kind consideration and patience in handling this supplement.

Sincerely,

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Attachments:

1. E-mail- David Mannai of ENVY to Residents NRC Inspectors David Pelton and Beth Siene
2. NRC Web Page- Vermont Yankee/ Missing Fuel Description